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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/569,337	02/06/2007	Alexander C. Chang	11393-004-999	3171

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JONES DAY
222 EAST 41ST ST
NEW YORK, NY 10017

EXAMINER

MANUEL, GEORGE C

ART UNIT	PAPER NUMBER
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3762

MAIL DATE	DELIVERY MODE
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03/01/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/569,337	Applicant(s) CHANG, ALEXANDER C.	
	Examiner George Manuel	Art Unit 3762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 85-110 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 85-110 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>2/21/06</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 807. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

Claim 101 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The preamble of the claim is directed to identifying asymptomatic coronary heart disease; however, the body of the claim is only directed to analyzing an electrocardiogram measurement which does not clearly identify coronary heart disease.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 85-110 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stratbucker (US 6,327,487) in view of Vogelmann et al (US 3,727,190).

Stratbucker discloses perforations (P) in Fig. 7b which allow easy removal of the RA, LA, and LL electrodes when it is desired to deploy and place said electrodes at conventional subject limb locations in use. The support sheet separation shown in Fig. 7b allows for first, second, third and fourth non-conductive pads for electrode placement.

Stratbucker does not disclose the features of a first time interval for measuring a unipolar lead and a second time interval for measuring a bipolar lead and from the time intervals analyzing the electrocardiogram measurement.

Vogelmann et al teach recording electrocardiogram data using fourteen electrodes 10 comprising elements RA, LA, RL, LL, V₁, V₂, V₃, V₄, V₅, V₆, H, M, I, and E in FIG. 1. These legends identify the location on the patient's body where the electrode is attached. Namely, RA for right arm, LA for left arm, RL for right leg, LL for left leg. The next six electrodes V₁ to V₆ are connected to the six precordial or chest points from which the chest measurements are derived. The electrodes identified H, M, I and E are connected respectively to the right or left side of the neck posteriorly; to the center of

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the spine opposite to the chest leads; to the right mid-axillary line at fifth intercostal space; and to the mid sternum at the level of the fifth intercostal space of the patient to provide the Frank Orthogonal measurements. The outputs from the electrodes 10 are applied to a buffer 18. The outputs from the buffer are applied to matrix 20 which generates the twelve output electrocardiogram leads or waveforms and the three Frank Vector waveforms. The leads or waveforms generated in the electrocardiogram group are the three standard limb leads I, II, III; the three aV leads; and the six V leads from 1-6 inclusive. The sequencer 22 functions to gate the leads such that a first measurement corresponds to a unipolar lead and the matrix 20 provides a means for creating a second sequenced measurement corresponding to a bipolar lead.

One of ordinary skill in the art would have found it obvious to use the teachings of Vogelmann et al to arrange the electrocardiogram data from the electrodes disclosed in Stratbucker because the signal components represent the same basis of elements RA, LA, RL, LL, V₁, V₂, V₃, V₄, V₅, V₆, H, M, I, and E. It would be advantageous to present an electrocardiogram using the teachings of Vogelmann et al with the electrode placement of Stratbucker to allow a physician to identify asymptomatic coronary heart disease without re-arranging the electrodes.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Manuel whose telephone number is (571) 272-4952.

/George Manuel/
Primary Examiner
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